

THREE NEW SPECIES OF MALVACEAE FROM MEXICO

Paul A. Fryxell

Research Geneticist, U.S. Department of Agriculture, Science and Education Administration, and Texas A&M University, College Station, TX 77843

Dendrosida parviflora Fryxell, sp. nov.

(Fig. 1)

Arbor usque ad 6 m alta, ramunculis viridibus atque cortice laevi; laminis foliorum ovatis concoloribus, glabris praeter caespitibus pilorum in axillis nervorum infra; pedicellis gracilibus, 1-4 cm longis, axillaribus; involuцello nullo; calycibus 8-10 mm longis, 10-nervatis, extra glabris; petalis luteis, ca. 1.5 cm longis; fructibus glabris, in maturitate nigricantibus, 7 mm diametro, mericarpiis 7-8, omnis 1-seminali.

Tree to 6 m tall with smooth bark, the twigs green, appearing glabrate but minutely stellate-pubescent, the hairs less than 0.1 mm long. Leaf blades ovate to lanceolate, up to 17 cm long, 10 cm wide, usually smaller and 1.5-2.5 times as long as wide, basally more or less truncate (subcordate to subcuneate), palmately 5-7-nerved, crenate to subentire (the veins terminating at the margin in a glandular tooth), acute, membranous, green and concolorous, essentially glabrous except for dense tufts of white hairs (0.5- 1 mm long) in the axils of principal veins at base of blade beneath (fig. 1). Petioles 3-8.5 cm long (1/3-2/3 length of blade), with pubescence like that of stem. Stipules subulate, 3-4 mm long, caducous. Pedicels slender, usually solitary in the axils, more or less aggregated toward the branch tips, 1-4 cm long, articulated 4-6 mm below the flower. Involuцel absent. Calyx 8-10 mm long, 5-lobed (ca. half-divided or more), 10-nerved (the 5 midribs becoming prominent ridges below), green and glabrous externally, minutely woolly and whitish internally, closely enclosing the fruit. Petals bright yellow throughout, ca. 1.5 cm long, ciliate on claw, otherwise glabrous. Staminal column 2 mm tall, glabrous, yellowish; filaments 1-1.5 mm long; anthers numerous, yellowish, 1 mm long; pollen orange-yellow, spherical, echinate. Styles glabrous, the stigmatic area truncate or subcapitate. Fruits essentially glabrous, green when immature becoming blackish at maturity, ca. 7 mm diameter, oblate or oblate-conic, 5-6 mm tall; mericarps 7-8, glabrous, the dorsal wall clearly defined and smooth having a characteristic "shoulder," dehiscent above this point, the lateral wall smooth except for a restricted zone of rugosity along basal-dorsal margin (fig. 1). Seed solitary, glabrous, ca. 3.5 mm long.

Type: MEXICO: Oaxaca: Mpio. San Juan Lachao. Carretera Puerto Escondido-Oaxaca, 1.5 km al N de La Asunción, 72 km al N de Puerto Escondido. Bosque de pino y encino. Suelo franco. Alt. 1260 m. Arbolito de 6 m de alto. Flores de color amarillo. Común en una cañada húmeda. 15 Nov 1979, Koch, Fryxell & Wendt 79549 (holotype: MEXU; isotypes: BM, CAS, CHAPA, CTES, ENCB, F, MO, NY, pf).

Dendrosida is a wholly Mexican genus of arborescent plants, known only from the states of Chiapas, Oaxaca, and Guerrero, of which D. parviflora is the fourth species to be described. The other three species are compared in a table (Phytologia 37: 290. 1977) that lists the principal distinguishing characters. The new species differs from these in its smaller flowers (as the specific epithet suggests), in its distinctive pubescence pattern, and in other characters. The characteristic mericarp morphology of the genus is illustrated for D. batesii Fryxell (Brittonia 23: 232. fig. 2. 1971) and for D. parviflora in the accompanying illustration (fig. 1).

Pavonia pulidoae Fryxell, sp. nov.

(Fig. 2)

Frutex 1.5 m altus, stellato-pubescent, trichomatibus statura variabilis; laminis foliorum ovatis plus minusve discoloribus, remote dentatis; pedicellis 1-2 cm longis, axillaribus; involucello 8-9-partito, lobis involucelli lineari-lanceolatis, calycem excedentibus; calycibus anguste campanulatis, 10-12 mm longis; corollis tubularibus, 2-3 cm longis, salmonis; columna staminalis demum exsertis, filamentis 1 mm longis; stylis 10, pallidis, stigmatibus rubellis; fructibus oblongis, 8-9 mm diametro, pubescentibus, mericarpiis lignosis, 5, omnis 1-seminali.

Shrub to 1.5 m tall, the young stems densely pubescent, the hairs predominantly stellate, of variable size (0.2-1 mm long). Leaf blades ovate, truncate to cordate, remotely dentate or crenate to obscurely 3-lobed, rounded-acute, palmately 5-7-nerved, somewhat discolorous, 2-3 cm long, 1.2-2 cm wide, soft-pubescent above and beneath. Petioles 2-9 mm long, with pubescence like stem. Stipules subulate, 4-6 mm long, pubescent, caducous. Pedicels solitary in the upper axils, unjointed, ca. 1 cm long (in flower) to 2 cm long (in fruit), stellate-pubescent. Involucel 8-9-parted, the lobes linear-lanceolate (or weakly spatulate), 12-15 mm long (exceeding the calyx), 1-2 mm broad, more or less acute, pubescent. Calyx narrowly campanulate, sparsely and minutely pubescent, 10-12 mm long, 5-lobed, the lobes triangular, 3-4 mm long. Corolla 2-3 cm long, tubular (malvaviscoid), salmon-colored (drying reddish), externally covered with minute peg-like trichomes. Staminal column ultimately exserted by ca. 1 cm, glabrous, pallid, with 5 apical teeth; filaments short (1 mm); anthers and pollen yellowish. Styles 10, exceeding staminal column, pallid, with reddish capitate stigmas. Fruits enclosed by calyx, oblate, schizocarpic, ca. 8-9 mm diameter, minutely appressed-scrabridulous, more or less 10-ribbed, apically acute; mericarps 5, 6-7 mm tall (fig. 2), relatively woody (carpel walls ca. 0.5 mm thick), 1-seeded. Seeds glabrous, reniform, 4-4.5 mm long.

Type: MEXICO: Edo. México: Mpio. Texcoco, Cerro Tetzcutzingo, 7 km al E de Texcoco. Cerro cubierto con bosque de encino, muy perturbado. Suelo franco. Alt. 2550 m. Arbusto de 1.5 m de alto. Tallos verticales; flor color mamey. Lado oeste del cerro. Escaso. 19 Junio 1979, Ma. Teresa Pulido S. 23 (holotype: CHAPA; isotype: pf).

The finding of this previously undescribed species of *Pavonia* in the well-botanized Valley of Mexico was indeed unexpected, and its discovery is a credit to the collector, Marfa Teresa Pulido, in whose honor the species is named. *Pavonia pulidoae* belongs to *Pavonia* sect. *Malache* (Vogel in Trew) DC., which now includes six Mexican species. The 25 species of *Pavonia* known from Mexico are the subject of a paper (in press with the Boletín de la Sociedad Botánica de México) that will provide a key to species and other information.

Sida wendtii Fryxell, sp. nov.

(Figs. 3, 4)

Herba perennes procumbens; laminis foliorum anguste ellipticis vel linearibus, integris acutisque vel ad apicem obscure tridentatis, supra glabris vel trichomatibus stellatis secus marginem (non costam); pedicellis 1-4 mm longis, axillaribus autem in fasciculis terminalibus ut videtur ob internodiis apicalibus perabbreviatis; calycibus 5-6 mm longis; petalis 16-23 mm longis, roseis basibus atrorubris; fructibus ca. 6 mm diametro, manifeste muricatis prominentiis omnis trichomate glochidiato ad apicem; mericarpiis 5-6.

Perennial herb with a woody taproot. Stems numerous, procumbent, branching, the internodes abruptly shortened at apices, up to 1 m long, seldom more than 1.5 mm diameter, with minute appressed stellate hairs, these becoming lost in age. Leaf blades elliptic, linear-lanceolate, or oblong, 4-10 times as long as broad, basally subcordate, entire and acute or obscurely tridentate at apex, up to 22 mm long, 2-4.5 mm broad (juvenile leaves shorter and broader with manifest apical dentations), the lower surface with appressed stellate hairs evenly distributed, the upper surface with similar hairs along the margin (but not along the midrib) or these lost, leaving the upper surface glabrous. Petioles 4-7 mm long, canaliculate, sparsely stellate-pubescent, more densely so distally near juncture with the blade. Stipules narrowly lanceolate to oblanceolate, sparsely hispid, subequal to petioles along stem to exceeding petioles (9-14 mm long) at apices of the branches, 0.4-0.9 mm wide. Pedicels 1-4 mm long, minutely stellate-pubescent, axillary but appearing at the branch tips where the internodes are so shortened that the flowers appear to be in a terminal fascicle. Involucre absent, but the stipules at the branch tips may be mistaken for an involucre because of crowding. Calyx 5-6 mm long, ca. 2/3-divided, minutely stellate-pubescent, the lobes prominently ciliate (the hairs 1-2 mm long), obscurely veined, the lobes greenish, the base yellowish. Petals 16-23 mm long, ca. 10 mm wide, asymmetrically obovate, rose-colored with a poorly defined dark red spot at base, gradually narrowed to a sparsely ciliate claw, otherwise glabrous. Staminal column 4.5 mm long, sparsely pubescent or glabrous at base, pallid; filaments 1.5-3 mm long; anthers ca. 30, orangeish; pollen of mixed coloration (orangeish and dark red), spherical. Styles 5-6, slender, pallid, glabrous, exceeding staminal column by 4-6 mm; stigmas capitate, reddish. Fruits ca. 6 mm diameter, oblate-conical, brownish, prominently muricate, each projection with glochidiate hair on apex; mericarps 5-6.

Type: MEXICO: Oaxaca: Mpio. Sto. Domingo Armenta, terracerfa a Santo Domingo, 1.5 km al S de la carretera a Pinotepa Nacional-Acapulco, 29 km al O. de Pinotepa Nacional. Zona de potreros y manchones de bosque. Suelo franco-arenoso. Alt. 20 m. Hierba perenne, tallos procumbentes. Raiz pivotante. Pétalos color rosa carne, con una mancha más oscura en la base. Sobre orillas del camino y en potreros. Común. 8 Nov 1979, Koch, Fryxell & Wendt 79424 (holotype: ENCB; isotypes: BM, BR, CAS, CHAPA, CTES, F, K, MARY, MEXU, MICH, MO, NA, NO, NY, TEX, WIS, XAL, pf).

This species is a member of *Sida* sect. *Malachroideae* G. Don, recently treated by Clement (Contr. Gray Herbarium 180: 16-30. 1957), but is distinct from other known species. Its flowers (fig. 3) are larger than any except the Paraguayan *S. centuriata* Clement, and its narrower, virtually entire leaves (fig. 4) are distinctive in form. It is a pleasure to name this species in honor of Tom Wendt, co-collector of the type material, whose alert eyes originally spotted this material, and whose willing hands helped press the numerous isotypes.

FIGURE LEGENDS

- Figure 1. *Dendrosida parviflora*. Top left, branch tip with two flower buds; top right, individual mericarp in oblique view; bottom, climax leaf showing (inset) pubescence at base of blade.
- Figure 2. *Pavonia pulidoae*. Top, open flower and leaf; bottom, individual mericarp (on left) and sectional view of mericarp showing position of seed (on right).
- Figure 3. *Sida wendtii*. Flower.
- Figure 4. *Sida wendtii*. Branch tip, showing crowding of leaves, stipules, and flowers; inset, range of variation in form of leaf apices.

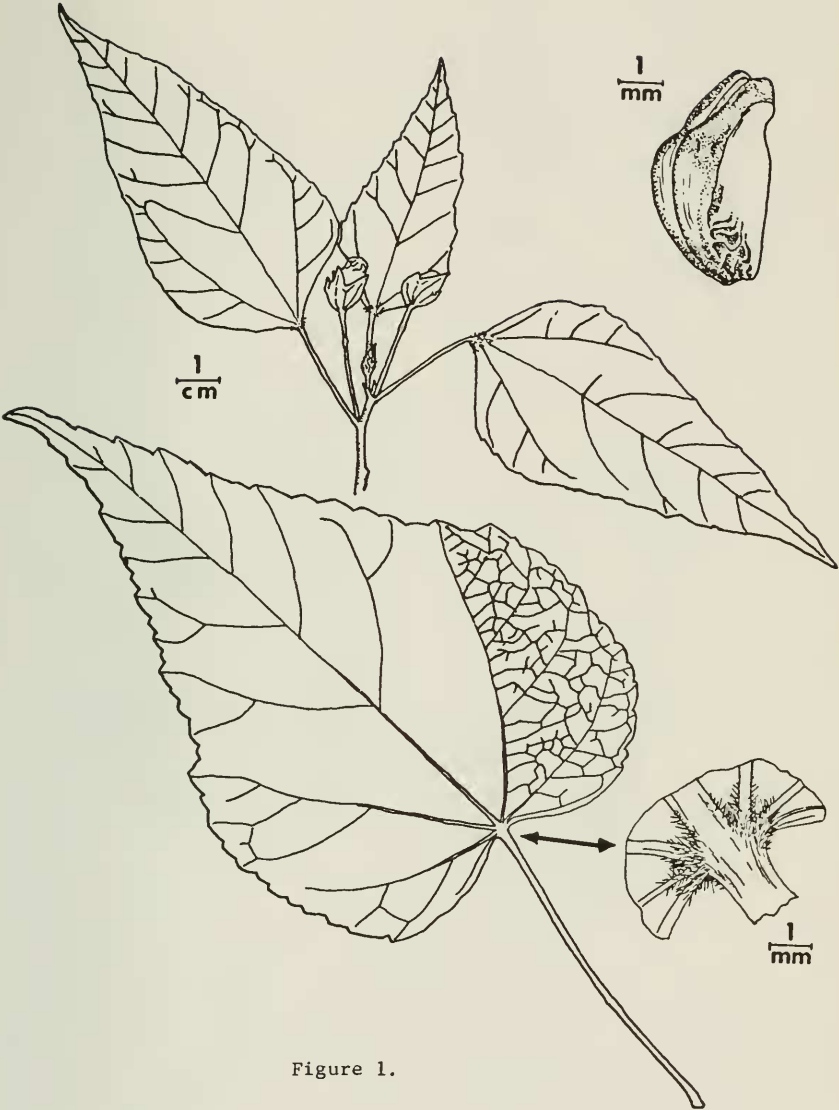


Figure 1.

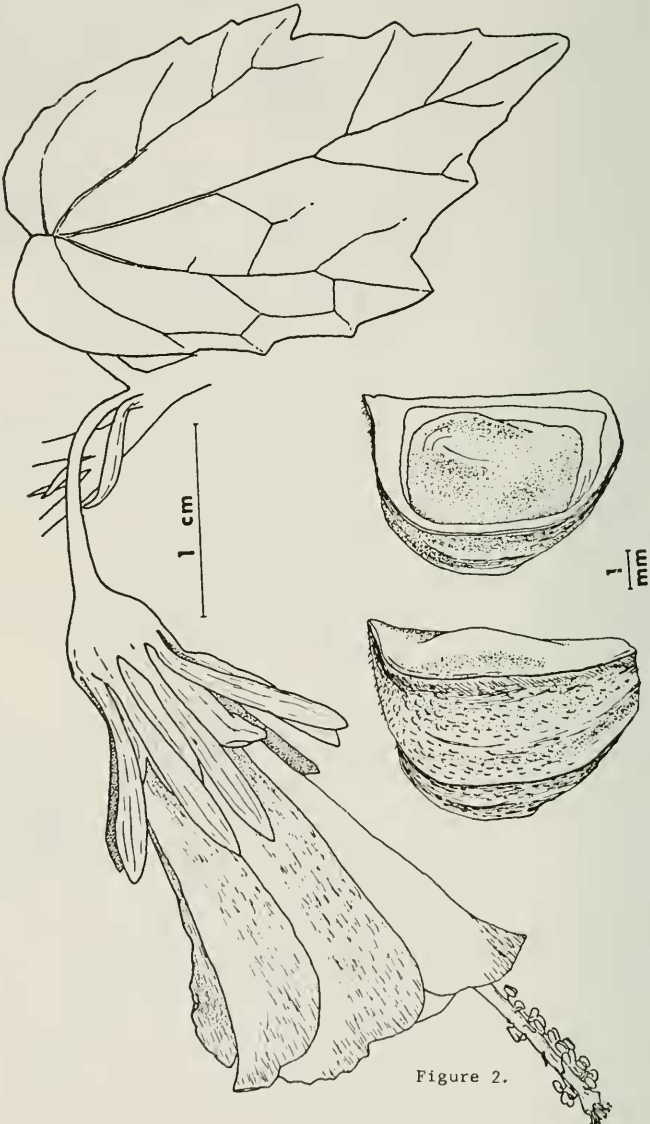


Figure 2.

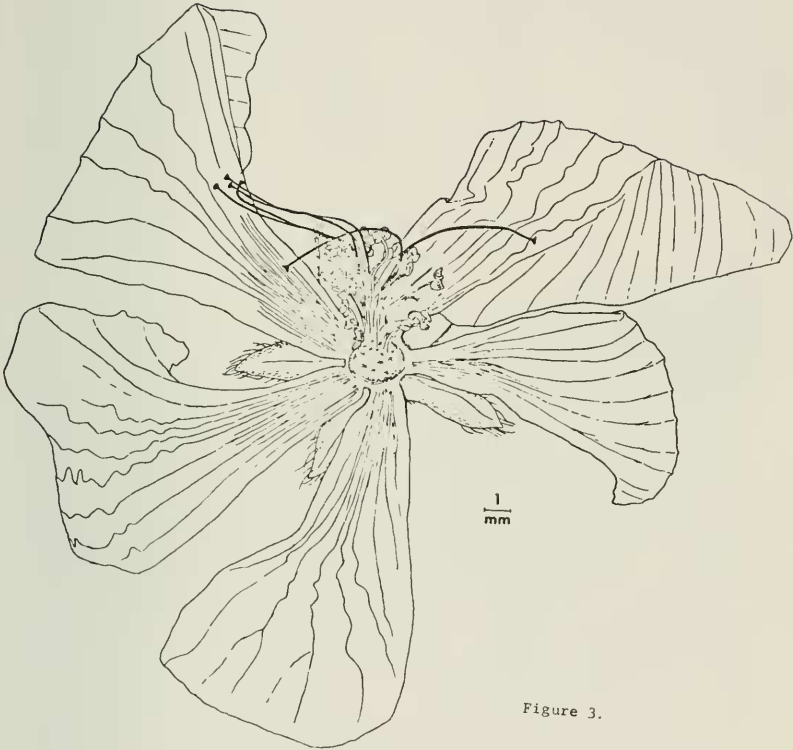


Figure 3.

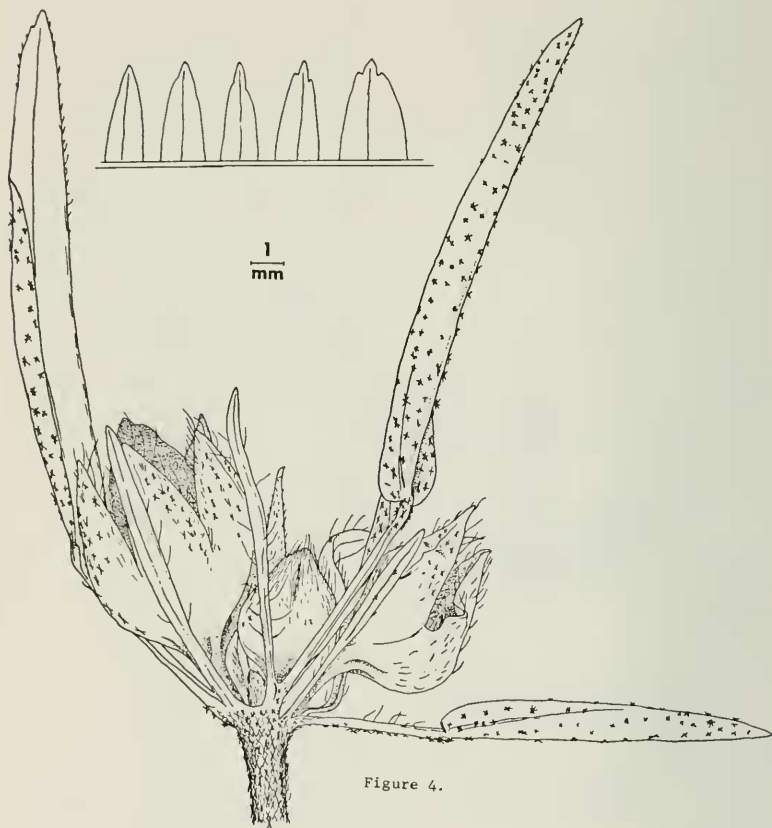


Figure 4.